MEDICAL LCD MONITOR

USER'S GUIDE

Before connecting, operating or adjusting this
product, please read this instruction booklet
carefully and completely.

MEDICAL LCD MONITOR
FS-L190*D(19")
FS-L190*DT(19")
FS-L240*D(24")
FS-L240*DT(24")
FS-L260*D(26")
FS-L320*D(32")
FS-L420*D(42")

Model definition

F S- L 1 9 0 * D T
 1   2   3   4 5 6

1. FS : Monitor manufacturer.
2. L : Panel manufacturer.
3. 190: Display size.
4. * : Signal input option.
5. D : Medical grade.
6. T : Touch screen installed.

Table of Contents

Symbol Definitions

The following symbols appear on the product, its labels, or the product package.
Each symbol carries a special definition, as defined below.

Dangerous : High Voltage.

Consult accompanying documents.

Direct Current.

Indicates protective earth ground.

DC Power control switch.

SN   Serial Number.

Top-Bottom.

Fragile.

Do not get wet.

3 Maximum Stacking.(19"/24"/26"/32")

2 Maximum Stacking.(42")

CE Indicates proof of conformity to applicable European Economic Community Council directives and to harmonized standards published in the official journal of the European Communities.

Medical LCD monitor is in accordance with UL 60601-1 and CAN/CSA C22.2 No.601.1 in regards to electric shock, fire hazards, and mechanical hazard.

FC Tested to comply with FCC Class B standard.

This symbol indicates that the waste of medical LCD monitor must not be disposed as unsorted municipal waste and must be collected separately. Please contact the manufacturer or other authorized disposal company to decommission your medical LCD monitor.

Safety Instructions

On Safety

1. Before connecting the AC power cord to the DC adapter outlet make sure the voltage designation of the DC adapter corresponds to the local electrical supply.

2. Never insert anything metallic into the cabinet openings of the medical LCD monitor. Doing so may create the danger of electric shock.

3. To reduce the risk of electric shock, do not remove cover. No user-serviceable parts inside. Only a qualified technician should open the case of the medical LCD monitor.

4. Never use your medical LCD monitor if the power cord has been damaged. Do not allow anything to rest on the power cord, and keep the cord away from areas where people can trip over it.

5. Be sure to hold the plug, not the cord,when disconnecting the medical LCD monitor power cord from an electric socket.

6. Unplug your medical LCD monitor power cord when it is going to be left unused for an extended period of time.

7. Unplug your medical LCD monitor power cord from the AC outlet before any service.

8. If your medical LCD monitor does not operate normally, in particular, if there are any unusual sounds or smells coming from it, unplug it immediately and contact an authorized dealer or service center.

9. Please contact the manufacturer if the set should be installed in an inaccessible area.

Warning

Do not touch input or output connectors and the patient simultaneously.

Warning

This medical LCD monitor is intended for connection to input/output signals and other connectors that comply with relevant IEC standard (e.g.,IEC60950 for IT equipment and IEC60601 series for medical electrical equipment).
In addition, all such combination-system shall comply with the standard IEC 60601-1-1, safety requirements for medical electrical systems. Any person who has formed a combination-system is responsible for the system to comply with the requirements of IEC 60601-1-1.
If in doubt, contact a qualified technician or your local representative.

On installation

1. Openings in the medical LCD monitor cabinet are provided for ventilation. To prevent overheating, these openings should not be blocked or covered. If you put the medical LCD monitor in a bookcase or some other enclosed space, be sure to provide adequate ventilation.
2. Put your medical LCD monitor in a location with low humidity and a minimum of dust.
3. Do not expose the medical LCD monitor to rain or use it near water (in kitchens, near swimming pools, etc.). If the medical LCD monitor accidentally gets wet, unplug it and contact an authorized dealer mediately. You can clean the medical LCD monitor with a damp cloth if necessary, but be sure to unplug the medical LCD monitor first.
4. Place your medical LCD monitor near an easily accessible AC outlet.
5. High temperature can cause problems. Don't use your medical LCD monitor in direct sunlight and keep it away from heaters, stoves, fireplaces,and sources of heat.
6. Don't place your medical LCD Monitor on an unstable stand, Medical LCD monitor may malfunction or fall.
7. This medical LCD monitor should not topple over when tilted at a 5 degree angle, in any position, during NORMAL USE, excluding transport.
8. In the position specified for transport, Medical LCD monitor shall not overbalance when tilted at a 10 degree angle.

Environmental Conditions for operation and Storage
- Temperature range within 0°C to 40°C(operation), -20°C to 60°C(storage)
- Relative humidity range 10% to 85%
  Atmospheric pressure range within 500 to 1060hPa.

Intended Use
- This Medical LCD Monitor is an accessory intended for use with Medical Equipment
  to display alphabetical, numerical and graphical data.

CAUTION

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

This symbol alerts the user that important literature concerning the operation of this unit has been included. Therefore, it should be read carefully in order to avoid potential problems.

This symbol warns user that un-insulated voltage within the unit may have sufficient magnitude to cause electrical shock. Therefore, it is dangerous to make contact with any part inside the unit. To reduce the risk of electric shock, DO NOT remove cover (or back).
There are no user serviceable parts inside. Refer servicing to qualified service personnel.

To prevent fire or shock hazards, do not expose this unit to rain or moisture. Also, do not use this unit's polarized plug with an extension cord receptacle or other outlets unless the prongs can be fully inserted. The display is designed to meet the medical safety requirements for a patient vicinity device.
This device may not be used in connection with life support equipment.

Underwriters Laboratories (UL) Classification:

UL safety Compliance:
This medical LCD monitor is U.L. Classified WITH RESPECT TO ELECTRIC SHOCK, FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH UL 60601-1/CAN/CSA C22.2 NO. 601.1

CE **EEC Safety Compliance**
This medical LCD monitor unit meets the requirements of EN-60601-1
so as to conform to the Medical Device Directive 93/42/EEC
(general safety information).
Use 120V rating 5-15P type plug only in the U.S

This medical LCD monitor complies to the above standards only when used with the
supplied medical grade power supply.

19"(FS-L190*D / FS-L190*DT)
            JMW190KA1200F02(BRIDGE POWER CORP.)
24"/26"(FS-L240*D / FS-L240*DT / FS-L260*D)
            JMW1150KA2400F04(BRIDGE POWER CORP.)
32"(FS-L320*D) JMW1180KA2400F01(BRIDGE POWER CORP.)

Caution: Make sure the power cord is the correct type that is required in your area.
This medical LCD monitor has a universal power supply that allows operation in
either 100-120V AC or 200-240V AC voltage areas (no user adjustment is required).

Use the proper power cord with correct attachment plug type. If the power source is
120 V AC, use a power cord which is a Hospital Grade Power Cord with NEMA 5-15
style plug, labeled for 125 volts AC with UL and C-UL approvals. If the power source
is a 240 V AC supply, use the tandem (T blade) type attachment plug with ground
conductor power cord that meets the respective European country's safety
regulations.

The hospital-grade plug for medical products intended for use in Denmark has
DEMKO approval and is rated 13 amps at 250Vac. Plug is recommended for use in
medical applications and specifications are being added to the standard SB
107-2-D1. Plug mates with maker's Danish hospital-grade socket. Hospital sockets
have slightly different shaped openings allowing only the hospital plug, not the stan-
dard Danish plug, to be inserted, to protect the ac circuit in specific medical settings.
Recycling

Follow local governing ordinances and recycling plans regarding the
recycling or disposal of this equipment.

Cleaning Instructions

Follow your hospital protocol for the handling of blood and body fluids. Clean the display with a diluted mixture of mild detergent and water. Use a soft towel or swab.

Use of certain detergents may cause degradation to the labels and plastic components of the product.

Consult cleanser manufacturer to see if agent is compatible with it.

Do not allow liquid enter the display.

Servicing

Do not attempt to service the medical LCD monitor yourself, as opening or removing covers may expose you to dangerous voltages or other hazards, and will void the warranty. Refer all servicing to qualified service personnel.

Unplug the medical LCD monitor from its power source and refer servicing to qualified personnel under the following conditions:

- If the power cord or plug is damaged or frayed.
- If liquid has been spilled into the medical LCD monitor.
- If objects have fallen into the medical LCD monitor.
- If the medical LCD monitor has been exposed to rain or moisture.
- If the medical LCD monitor has been subjected to excessive shock by being dropped.
- If the cabinet has been damaged.
- If the medical LCD monitor seems to be overheated.
- If the medical LCD monitor emits smoke or abnormal odor.
- If the medical LCD monitor fails to operate in accordance with the operating instructions.

Accessories

Use only accessories specified by the manufacturer, or sold with the medical LCD monitor.

Classification

- Protection against electric shock : Class I including AC/DC Adapter
- Applied Parts : No Applied Parts
- Degree of safety in the presence of flammable anesthetics mixture with air or with oxygen or with nitrous oxide.
  Not suitable for use in the presence of a flammable anesthetics mixture with oxygen or with nitrous oxide.
- Mode of operation : Continuous.

FCC Information

This medical LCD monitor unit has been tested and found to comply with the
limits of a Class B digital device, pursuant to Part 15 of the FCC rules.
These limits are designed to provide reasonable protection against interference.
This monitor can radiate radio frequency energy and, if not installed and used in
accordance with the instructions, it may interfere with other radio communications
equipment. There is no guarantee that interference will not occur in a particular
installation.
If this equipment is found to cause harmful interference to radio or television
reception, the user is encouraged to try to correct the interference by carrying out
one or more of the following measures:
1. Reorient or relocate the receiving antenna.
2. Increase the distance between the medical LCD monitor and the subject of
   interference.
3. Plug the monitor into an outlet on a different electrical circuit than that to which
   the subject of interference is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

NOTICES TO USER
This device complies with part 15 of the FCC Rules. Operation is subject to the
following two conditions:
(1) this device may not cause harmful interference, and (2) this device must
accept any interference received, including interference that may cause
undesired operation.

FCC WARNING
This medical LCD monitor generates or uses radio frequency energy. Changes
or modifications to this medical LCD monitor may cause harmful interference
unless the modifications are expressly approved in the instruction manual. The
user could lose authority to operate this equipment if an unauthorized change or
modification is made.

1. Guidance and manufacturer's declaration - electromagnetic emissions

The medical LCD monitor is intended for use in the electromagnetic environment specified below. The customer or the user of the medical LCD monitor should assure that it is used in such an environment.		
Emission test	Compliance	Electromagnetic environment -guidance
RF Emissions CISPR 11	Group 1	The medical LCD monitor uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment
RF Emissions CISPR 11	Class B	The medical LCD monitor is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes
Harmonic emissions IEC 61000-3-2	D	
Voltage fluctuations IEC 61000-3-3	Complies	

2. Guidance and manufacturer's declaration - electromagnetic immunity

This medical LCD monitor is intended for use in the electromagnetic environment specified below. The customer or the user of the medical LCD monitor should assure that it is used in such an environment.			
Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment -guidance
Electrostatic discharge(ESD) IEC61000-4-2	6kV Contact 8kV air	6kV Contact 8kV air	Floors should be wood,concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%
Electrical fast transient/burst IEC 61000-4-4	2kV for power supply lines 1kV for input/output lines	2kV for power supply lines 1kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.

Surge IEC 61000-4-5	1kV differential mode 2kV common mode	1kV differential mode 2kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80MHz	3 Vrms 150 kHz to 80MHz	Portable and mobile RF communications equipment should be used no closer to any part of the medical LCD monitor, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance : d** $d = [\frac{3,5}{V_1}]\sqrt{P}$ where P is the maximum output power rating of the transmitter in watts (W)

3. Guidance and manufacturer's declaration - electromagnetic immunity

This medical LCD monitor is intended for use in the electromagnetic environment specified below.
The customer or the user of monitor should assure that it is used in such an environment.

Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment -guidance
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	3.0A/m	3.0A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % U_T (>95 % dip in U_T) for 0.5 cycle 40 % U_T (60 % dip in U_T) for 5 cycle 70 % U_T (30 % dip in U_T) for 25 cycle <5 % U_T (<95 % dip in U_T) for 5 sec.	<5 % U_T (>95 % dip in U_T) for 0.5 cycle 40 % U_T (60 % dip in U_T) for 5 cycle 70 % U_T (30 % dip in U_T) for 25 cycle <5 % U_T (<95 % dip in U_T) for 5 sec.	Main power quality should be that of a typical commercial or hospital environment. If the user of monitor requires continued operation during power mains interruptions, it is recommended that monitor be powered from an uninterruptible power supply or a battery. NOTE : U_T the A.C. mains voltage prior to application of the test level.

Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment -guidance
Radiated RF IEC 61000-4-3	3 V/m 80.0 MHz to 2.5 GHz	3 V/m 80.0 MHz to 2.5 GHz	**Recommended separation distance** 80MHz to 800MHz $d = [\frac{3,5}{E_1}]\sqrt{P}$ 80MHz to 2.5GHz $d = [\frac{7}{E_1}]\sqrt{P}$ where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, It should be less than the compliance level in each frequency range.

4. Recommended separation distances between portable and mobile RF communications equipment and this medical LCD monitor.

- The medical LCD monitor is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled.
The customer or the user of the monitor can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the medical LCD monitor as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter [W]	Separation distance according to frequency of transmitter[m]		
	150kHz to 80MHz $d = [\frac{3,5}{V_1}]\sqrt{P}$	80MHz to 800MHz $d = [\frac{3,5}{E_1}]\sqrt{P}$	800MHz to 2.5GHz $d = [\frac{7}{E_1}]\sqrt{P}$
	V1=3Vrms	E1=3V/m	E1=3V/m

0.01	0.116	0.116	0.2333
0.1	0.368	0.3687	0.7378
1	1.166	1.1660	0.2333
10	3.687	3.6872	0.7375
100	11.660	11.6600	23.333

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m)can be estimated using the equation applicable to the frequency of the transmitter, where p is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1) At 80MHz and 800MHz, the separation distance for the higher frequency range applies.

NOTE 2) These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Parts

▶ 19" FS-L190*D / FS-L190*DT Monitor
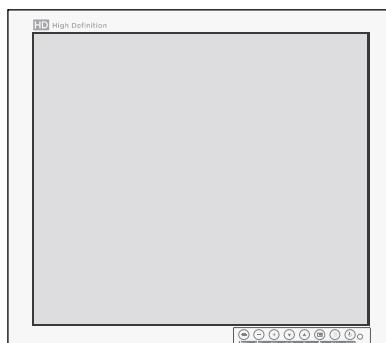
▶ Accessories
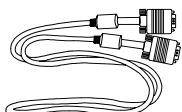
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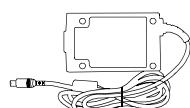
D-SUB Cable

AC-DC Adaptor
(JMW190KA1200F02)
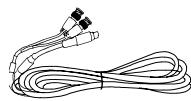
S-Video (Y/C) Cable
(Option)
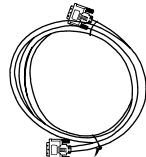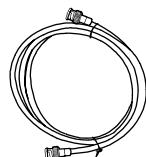
DVI Cable

BNC Cable

AC Power cord
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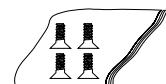
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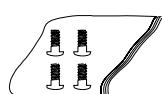
SCREW BH M4X10

⊙ 24" FS-L240*D / FS-L240*DT Monitor
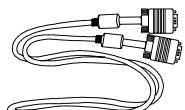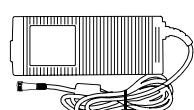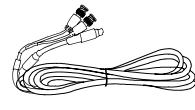
HD High Definition

⊙ Accessories
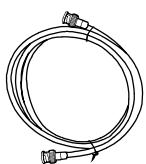
User Manual

D-SUB Cable

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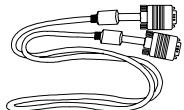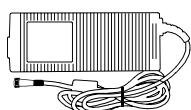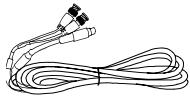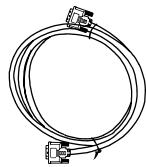
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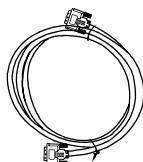
DVI Cable

BNC Cable

AC Power cord
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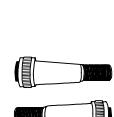
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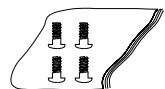
SCREW FH M3X6

SCREW BH M4X10

26" FS-L260*D Monitor
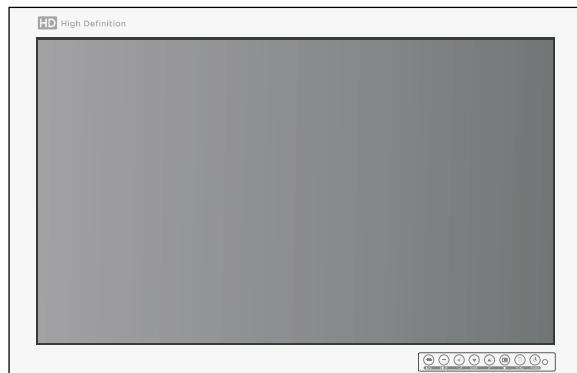
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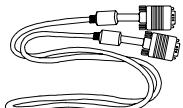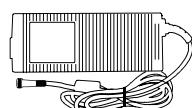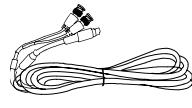
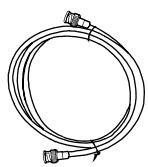User Manual

D-SUB Cable

AC-DC Adaptor
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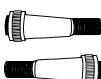

S-Video (Y/C) Cable
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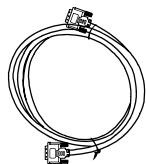
DVI Cable

BNC Cable

AC Power cord
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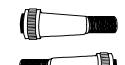
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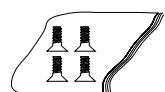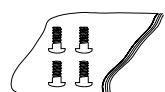
SCREW FH M3X6

SCREW BH M4X10

▶ 32" FS-L320*D Monitor

HD High Definition

▶ Accessories

User Manual

D-SUB Cable

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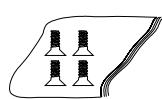
S-Video (Y/C) Cable
(Option)

DVI Cable

BNC Cable
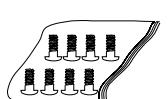
AC Power cord
(Hospital Grade)

DC Cable Terminal
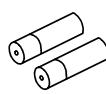Male / female (Option)

SCREW FH M3X6

SCREW BH M4X10

Remote controller

Battery(AAA)
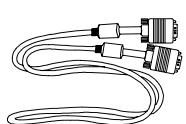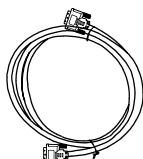
18- English

42" FS-L420*D Monitor
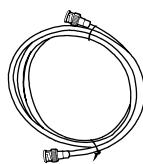

Accessories

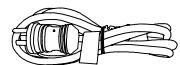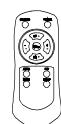

User Manual

D-SUB Cable

S-Video (Y/C) Cable
(Option)

DVI Cable

BNC Cable

AC Power cord
(Hospital Grade)

Remote controller

Battery(AAA)

Connector

19" FS-L190*D / FS-L240*D / FS-L260*D / FS-L320*D Input connector

▶ DVI fiber optic input

❶	DC Input	❿	SDI OUT
❷	DC ON/OFF SWITCH	⓫	S-VIDEO /Y
❸	OPTICAL IN	⓬	S-VIDEO /C
❹	DVI IN	⓭	C-VIDEO
❺	DVI OUT	⓮	RED /Pr
❻	VGA IN	⓯	GREEN /Y
❼	GPIO	⓰	BLUE /Pb
❽	RS232C	⓱	C-SYNC/H-SYNC
❾	SDI IN	⓲	

▶ Dual DVI input

❶	DC Input	❿	SDI OUT
❷	DC ON/OFF SWITCH	⓫	S-VIDEO /Y
❸	DVI 2 IN	⓬	S-VIDEO /C
❹	DVI 1 IN	⓭	C-VIDEO
❺	DVI 1 OUT	⓮	RED /Pr
❻	VGA IN	⓯	GREEN /Y
❼	GPIO	⓰	BLUE /Pb
❽	RS232C	⓱	C-SYNC/H-SYNC
❾	SDI IN	⓲	V-SYNC
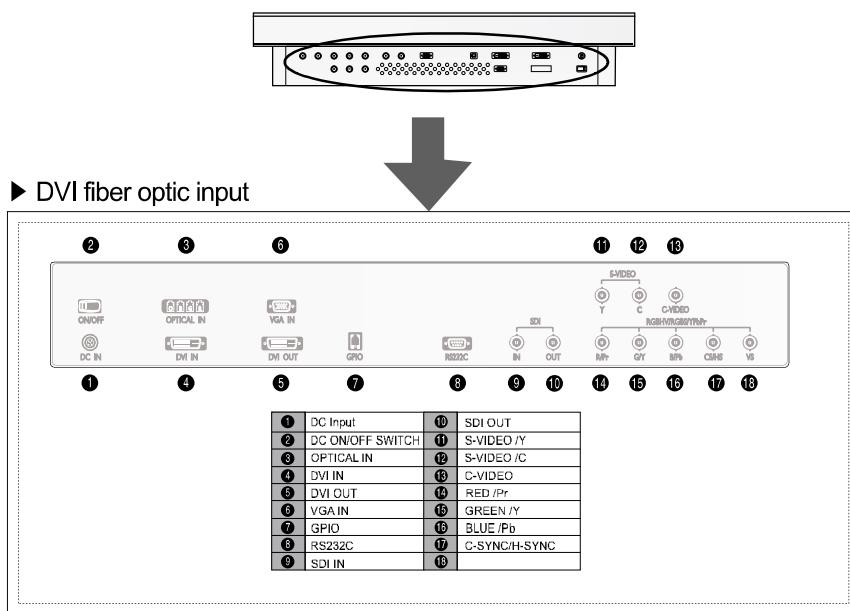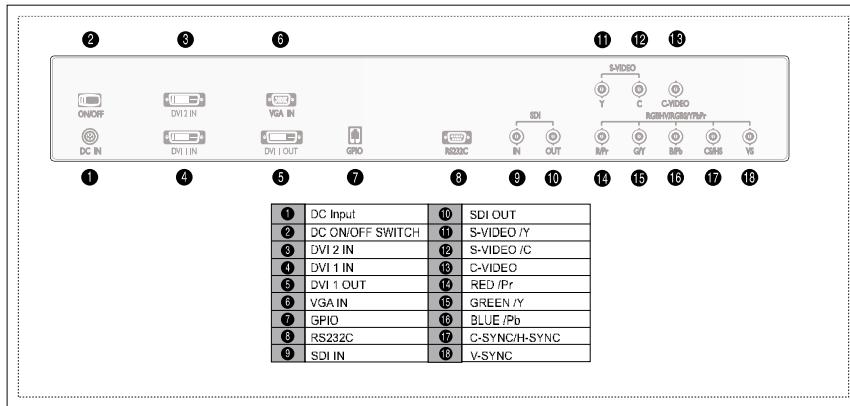
FS-L190*DT / FS-L240*DT input connector

▶ DVI fiber optic input

❶	DC Input	⓫	SDI IN
❷	DC ON/OFF SWITCH	⓬	SDI OUT
❸	OPTICAL IN	⓭	S-VIDEO /Y
❹	DVI IN	⓮	S-VIDEO /C
❺	DVI OUT	⓯	C-VIDEO
❻	VGA IN	⓰	RED /Pr
❼	GPIO	⓱	GREEN /Y
❽	USB TOUCH	⓲	BLUE /Pb
❾	SERIAL TOUCH	⓳	C-SYNC/H-SYNC
❿	RS232C	⓴	

▶ Dual DVI input

❶	DC Input	⓫	SDI IN
❷	DC ON/OFF SWITCH	⓬	SDI OUT
❸	DVI 2 IN	⓭	S-VIDEO /Y
❹	DVI 1 IN	⓮	S-VIDEO /C
❺	DVI 1 OUT	⓯	C-VIDEO
❻	VGA IN	⓰	RED /Pr
❼	GPIO	⓱	GREEN /Y
❽	USB TOUCH	⓲	BLUE /Pb
❾	SERIAL TOUCH	⓳	C-SYNC/H-SYNC
❿	RS232C	⓴	V-SYNC

FS-L420*D Input connector

▶ DVI fiber optic input

❶	AC ON/OFF SWITCH	❿	SDI OUT
❷	AC Inlet	⑪	S-VIDEO /Y
❸	OPTICAL IN	⑫	S-VIDEO /C
❹	DVI IN	⑬	C-VIDEO
❺	DVI OUT	⑭	RED /Pr
❻	VGA IN	⑮	GREEN /Y
❼	GPIO	⑯	BLUE /Pb
❽	RS232C	⑰	C-SYNC /H-SYNC
❾	SDI IN	⑱	

▶ Dual DVI input

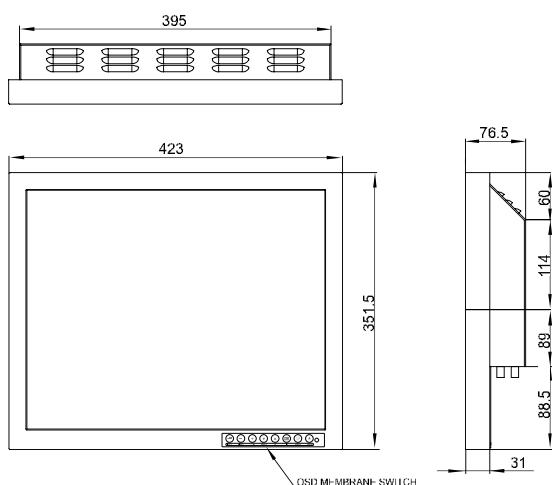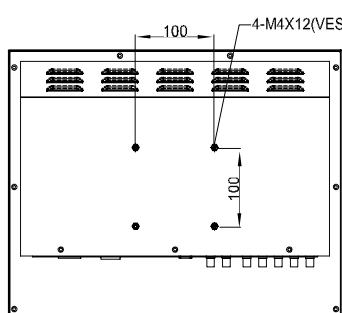|			
❶	AC ON/OFF SWITCH	❿	SDI OUT
❷	AC Inlet	⑪	S-VIDEO /Y
❸	DVI 2 IN	⑫	S-VIDEO /C
❹	DVI 1 IN	⑬	C-VIDEO
❺	DVI 1 OUT	⑭	RED /Pr
❻	VGA IN	⑮	GREEN /Y
❼	GPIO	⑯	BLUE /Pb
❽	RS232C	⑰	C-SYNC /H-SYNC
❾	SDI IN	⑱	

Mechanical Product Drawing

▶ FS-L190*D / FS-L190*DT Dimension

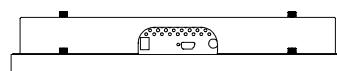### Front view
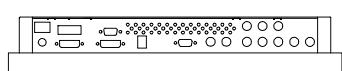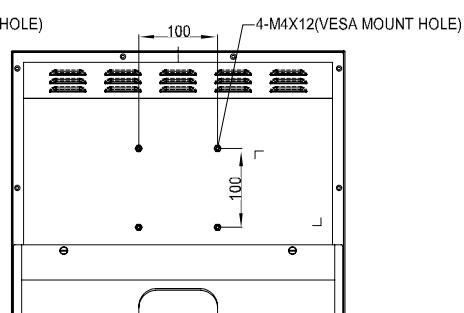
395

423

351.5

76.5

60

114

89

88.5

31

OSD MEMBRANE SWITCH

Rear view (Without I/O Cover)　　Rear view (Installed I/O Cover)

100　　4-M4X12(VESA MOUNT HOLE)

100　　4-M4X12(VESA MOUNT HOLE)

100

100

Unit : mm

● FS-L240*D / FS-L240*DT Dimension

Front view

580

386

95

51   44

68.7

124.3

OSD MEMBRANE SWITCH

Rear view (Without I/O Cover)

100

4-M4X12(VESA MOUNT HOLE)

100

Rear view (Installed I/O Cover)

100

4-M4X12(VESA MOUNT HOLE)

100

Unit : mm

FS-L260*D Dimension

Front view

618

412

99.5

55.5 44

66

107

OSD MEMBRANE SWITCH

Rear view (Without I/O Cover)

4-M4X12(VESA MOUNT HOLE)

200

100

100

Rear view (Installed I/O Cover)

4-M4X12(VESA MOUNT HOLE)

200

100

100

Unit : mm

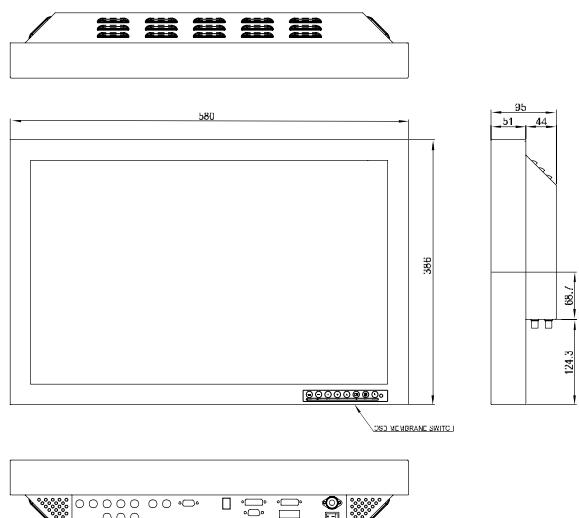● FS-L320*D Dimension
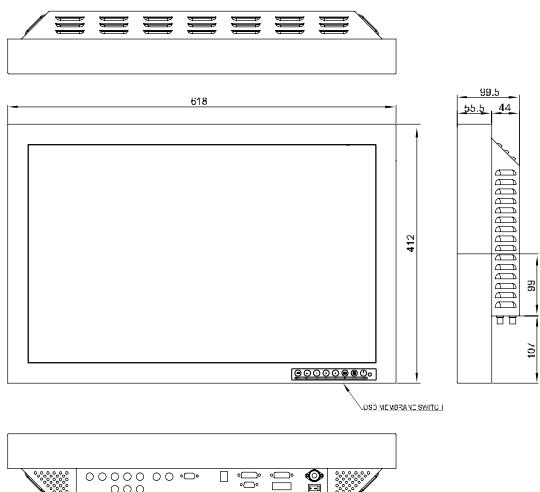
Front view

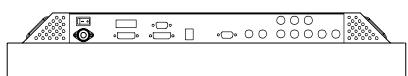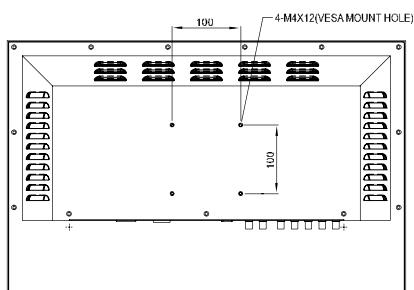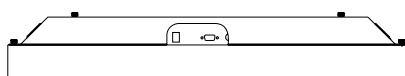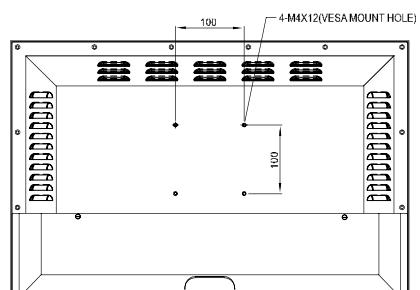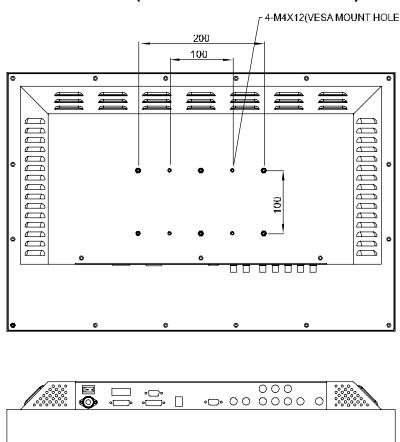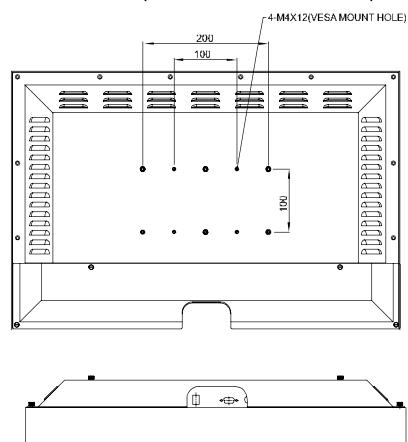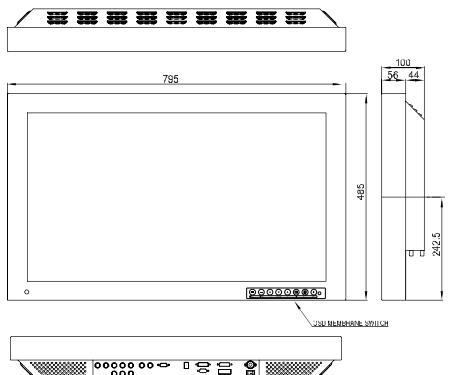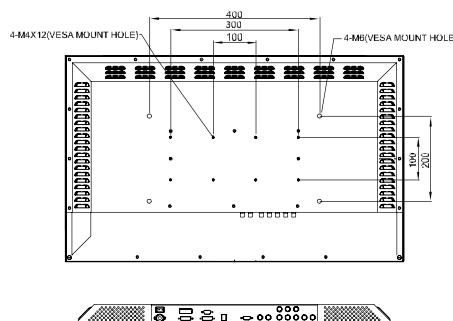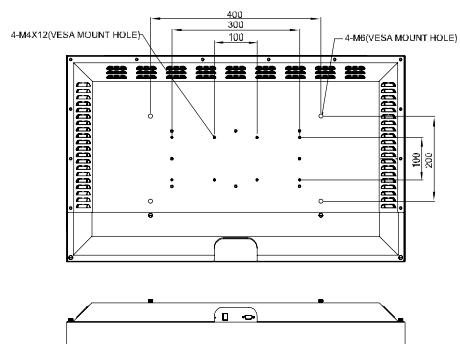Rear view (Without I/O Cover)   Rear view (Installed I/O Cover)

Unit : mm

● FS-L420*D Dimension

Front view

1024.6

111.1
55 50
70.3
617.4
495.4
1221.1

OSD MEMBRANE SWITCH

Rear view

600

10-M8(USER MOUNT HOLE)

300

200
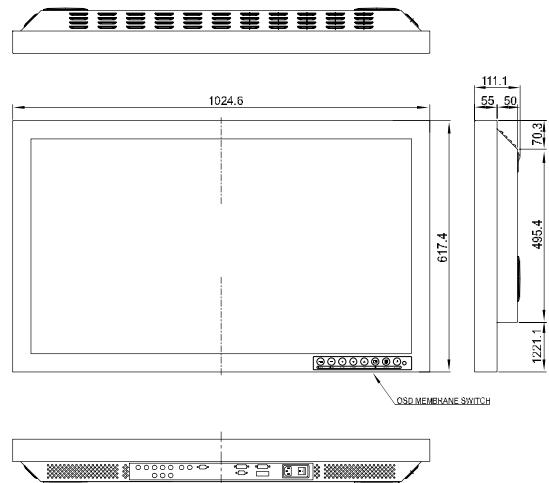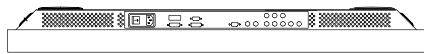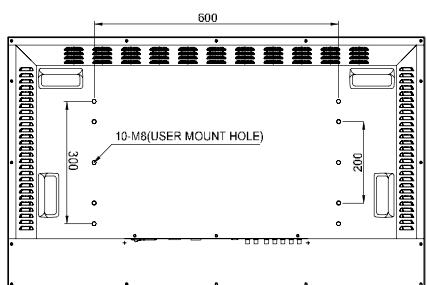
Unit : mm

Control

◯ OSD Button
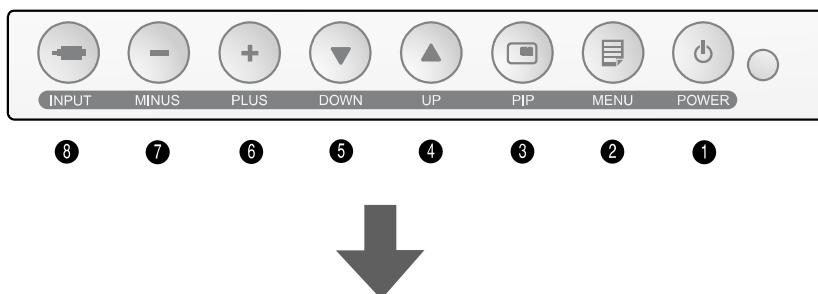
An 8 button keypad, located in bottom right corner on the front of the display, allows the user to make adjustments to various display parameters using the On Screen Display (OSD) system.

● Power Indicating LED

      Normal mode : Green
      Standby mode : Amber
      Monitor Off   : Off

Note : The LED state of Normal Mode and Monitor Off may be reversed.
       This can be change upon request.

● On-Screen Display (OSD) Function Button

 1. POWER : Soft power turns the monitor ON or OFF.

 2. MENU   : Used to activate to the OSD menu and exit from main menu or sub menu.

 3. PIP   : Enables PIP (picture in Picture) function. Select PIP, PBP1 or PBP2.

 4. UP (▲) : With the OSD deactivated, it is a Hot Key for increasing brightness.
              With the OSD activated, moves the cursor upward.

 5. DOWN (▼) : With the OSD deactivated, it is a Hot Key for decreasing brightness.
               With the OSD activated, moves the cursor downward.

6. PLUS (+) : With the OSD deactivated, it is a Hot Key for increasing contrast.
With the OSD activated, enter sub menu and increases the
adjustment of the selected function.

7. MINUS (-) : With the OSD deactivated, it is a Hot Key for decreasing contrast.
With the OSD activated, it decreases the adjustment of the selected
function.

8. INPUT : With the OSD deactivated, by pressing down for over 1 sec., it is a Hot Key for
auto-adjustment control under DSUB ANALOG / RGBs signals.
With the OSD activated, it changes the displayed signal source.

● Remote button function

Note: Remote control is available for the FS-L320*D and FS-L420*D models only.
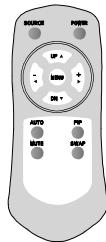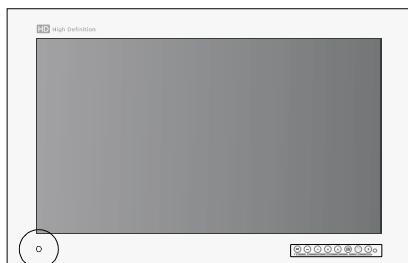
1. SOURCE : Change the display signal source.
2. POWER : Soft power turns the monitor ON or OFF.
3. UP (▲) : With the OSD deactivated, it is a Hot key for increasing brightness.
        With the OSD activated, moves the cursor upward.
4. DOWN (▼) : With the OSD deactivated, it is a Hot Key for decreasing brightness.
            With the OSD activated, moves the cursor downward.
5. MINUS (-) : With OSD deactivated, it is a Hot Key for decreasing contrast.
        With the OSD activated, it decreases the adjustment of the selected function.
6. PLUS (+) : With the OSD deactivated, it is Hot Key for increasing contrast.
        With the OSD activated, it decreases the adjustment of the selected function.
7. MENU : Used to activate to OSD menu and exit from main menu or sub menu.
8. AUTO : Fit to the most appropriate screen on the D-SUB Analog signal.
9. PIP : Enables PIP(picture in Picture) function.
        Select PIP,PBP1,PBP2
10. MUTE : Sound muted.
11. SWAP : Swaps the position of the Primary and Secondary images.

⬤ GPIO

1. Primary and Secondary Swap
   Pressing the swap button
   swaps the primary and secondary image.
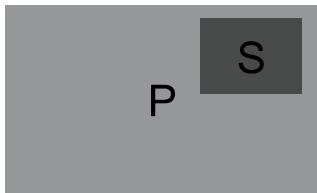
2. PIP,PBP1,PBP2 Selet
   The selection of secondary image
   position button pressed.
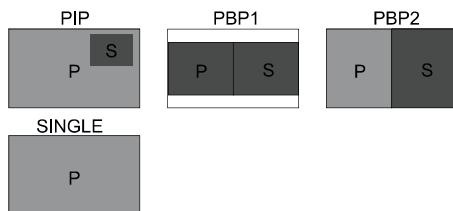
3. Record Indicator
   The record indicator is displayed while
   a contact closure to the ground pin
   is present.The indicator is removed
   when the contacts are opened.
   The record indicator is displayed in the
   monitor's top left corner.
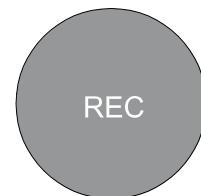
4. GND
   Common ground

Monitor
RJ69

GPIO
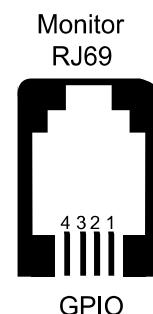
Power management

This monitor does not adhere to the VESA DPMS standard when no signal is present on the video input.

Model	Status	LED sign	Power Consumption
FS-L190*D	Normal mode	Green on	<60W
	Standby mode	Green blinking	<20W
FS-L190*DT	Normal mode	Green on	<60W
	Standby mode	Green blinking	<20W
FS-L240*D	Normal mode	Green on	<100W
	Standby mode	Green blinking	<20W
FS-L240*DT	Normal mode	Green on	<100W
	Standby mode	Green blinking	<20W
FS-L260*D	Normal mode	Green on	<130W
	Standby mode	Green blinking	<20W
FS-L320*D	Normal mode	Green on	<150W
	Standby mode	Green blinking	<20W
FS-L420*D	Normal mode	Green on	<260W
	Standby mode	Green blinking	<20W

Note : The LED state of Normal Mode and Monitor Off may be reversed.
This can be changed upon request.

OSD
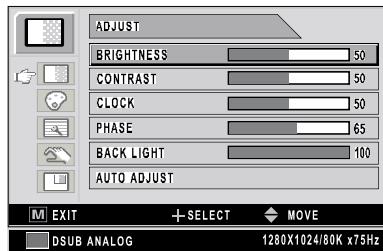
DSUB ANALOG / RGBS input source

ADJUST

```
ADJUST
BRIGHTNESS          50
CONTRAST            50
CLOCK               50
PHASE               65
BACK LIGHT         100
AUTO ADJUST
M EXIT      +SELECT      ◆ MOVE
DSUB ANALOG      1280X1024/80K x75Hz
```

1. BRIGHTNESS
   Increase or decrease the brightness. (Range : 0~100)
2. CONTRAST
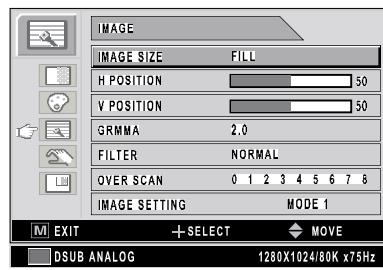   Increase or decrease the contrast. (Range : 0~100)
3. CLOCK
   Increase or decrease the sampling frequency. (Range : 0~100)
4. PHASE
   Increase or decrease the Phase level. (Range : 0~100)
5. BACKLIGHT
   Adjust backlight dimming level. (Range : 0~100)
6. AUTO ADJUST
   Fit to the most appropriate screen on the D-SUB Analog / RGBs signal.

COLOR TEMP

```
COLOR TEMP
MODE            C1
M EXIT      +SELECT      ◆ MOVE
DSUB ANALOG      1280X1024/80K x75Hz
```
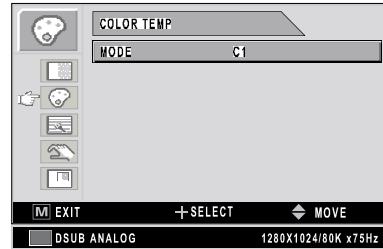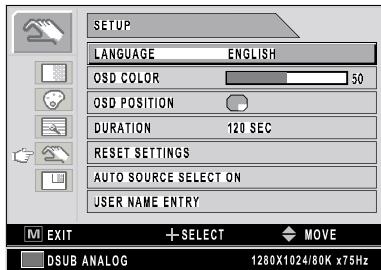
1. MODE
   Change the color mode C1(Reddish,6500K), C2(Bluish,9300K),
   USER(7200K)
2. RED
   Red balance. (Only works with USER Mode)   (Range : 0~100)
3. GREEN
   Green balance. (Only works with USER Mode)   (Range : 0~100)
4. BLUE
   Blue balance. (Only works with USER Mode)   (Range : 0~100)

IMAGE

```
IMAGE
IMAGE SIZE       FILL
H POSITION          50
V POSITION          50
GRMMA            2.0
FILTER           NORMAL
OVER SCAN    0 1 2 3 4 5 6 7 8
IMAGE SETTING    MODE 1
M EXIT      +SELECT      ◆ MOVE
DSUB ANALOG      1280X1024/80K x75Hz
```

1. IMAGE SIZE
   Change the image size. (Full, Fill aspect, 1:1, Normal)
2. H POSITION
   Adjust the horizontal position of the displayed source image.(Range : 0~100)
3. V POSITION
   Adjust the vertical position of the displayed source image. (Range : 0~100)
4. GAMMA
   Adjust GAMMA value (VIDEO, BYPASS, 1.8, 2.0, 2.2, 2.4, 2.6, PACS)
5. FILTER
   Set the sharpness of image (Softest, Soft, Normal, Sharp, Sharpest)
6. OVER SCAN
   Adjust the displayed size. (0~8)
7. IMAGE SETTING
   Change the image setting. (Preset 1,2 / User 1,2,3)
8. ZOOM / PAN
   Enlarge the image, move image left and right.
9. FREEZE FRAME
   Keep the image still.

English - 33

SETUP

```
┌─────────────────────────────────┐
│ [▨]  SETUP                      │
│                                 │
│ [▨] LANGUAGE        ENGLISH     │
│ [▨] OSD COLOR       ▭▭▭▭▭▭|50  │
│ [▨] OSD POSITION    (◯)        │
│ [▨] DURATION        120 SEC    │
│ [☞][▨] RESET SETTINGS           │
│ [▨] AUTO SOURCE SELECT ON       │
│     USER NAME ENTRY             │
│ [M] EXIT    +SELECT    ◆ MOVE  │
│ ▨ DSUB ANALOG    1280X1024/80K x75Hz │
└─────────────────────────────────┘
```

1. LANGUAGE
   Change the OSD language (8 language)
2. OSD COLOR
   Adjust the OSD background from white opaque to translucent.
3. OSD POSITION
   Change the OSD position. (9 Positions)
4. DURATION
   Adjust the length of time the OSD is displayed on the screen.
   (5, 10, 20, 30, 60, 90, 120, 180, 240 seconds)
5. RESET SETTING
   Change all the OSD values to factory outgoing state.
6. AUTO SOURCE SELECT
   Disable or enable auto source select.
   ON: Search through all possible input source untill an active video
       source is found.
   OFF: Video input is manually selected.
7. USER NAME ENTRY
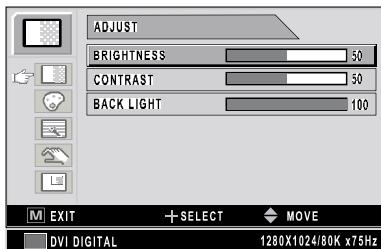   Create or change the user name when powered on.

PIP

```
┌─────────────────────────────────┐
│ [▨]  PIP                        │
│                                 │
│ [▨] LAYOUT          SINGLE      │
│ [▨]                             │
│ [▨]                             │
│ [▨]                             │
│ [▨]                             │
│ [☞][▨]                          │
│ [M] EXIT    +SELECT    ◆ MOVE  │
│ ▨ DSUB ANALOG    1280X1024/80K x75Hz │
└─────────────────────────────────┘
```
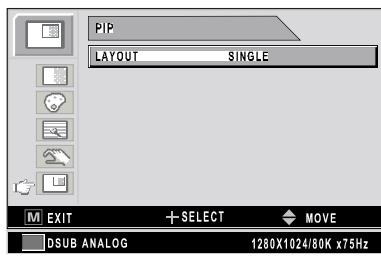
1. LAYOUT
   Change the OSD layout. (Single, PIP, PBP1, PBP2)
2. SOURCE
   Change the secondary source.
3. SIZE
   Change the PIP size (Small, Large)
4. POSITION
   Change the secondary source.
5. SWAP
   Swap the position and size of the Primary and Secondary image.

● DVI OPTICAL / DVI DIGITAL input source

ADJUST

```
ADJUST
BRIGHTNESS        50
CONTRAST          50
BACK LIGHT       100

M EXIT    +SELECT    ◆ MOVE
DVI DIGITAL       1280X1024/80K x75Hz
```

1. BRIGHTNESS
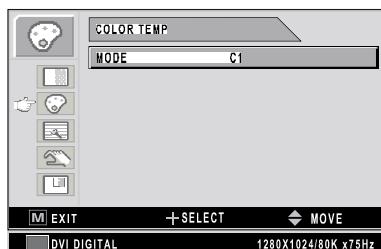   Increase or decrease the brightness. (Range : 0~100)
2. CONTRAST
   Increase or decrease the contrast. (Range : 0~100)
3. BACKLIGHT
   Adjust backlight dimming level. (Range : 0~100)

COLOR TEMP

```
COLOR TEMP
MODE             C1

M EXIT    +SELECT    ◆ MOVE
DVI DIGITAL       1280X1024/80K x75Hz
```

1. MODE
   Change the color temperature mode. C1(Reddish,6500K), C2(Bluish,9300K), USER(7200K)
2. RED
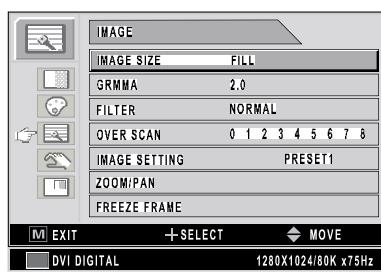   Red balance (Only works with the USER mode) (Range : 0~100)
3. GREEN
   Green balance (Only works with the USER mode) (Range : 0~100)
4. BLUE
   Blue balance (Only works with the USER mode) (Range : 0~100)

IMAGE

```
IMAGE
IMAGE SIZE        FILL
GRMMA             2.0
FILTER            NORMAL
OVER SCAN         0 1 2 3 4 5 6 7 8
IMAGE SETTING     PRESET1
ZOOM/PAN
FREEZE FRAME

M EXIT    +SELECT    ◆ MOVE
DVI DIGITAL       1280X1024/80K x75Hz
```

1. IMAGE SIZE
   Change the image size. (Full, Fill aspect**, 1:1**, Normal)
    ** Only in DVI Optical
2. GAMMA
   Adjust GAMMA value (VIDEO, BYPASS, 1.8, 2.0, 2.2, 2.4, 2.6, PACS)
3. FILTER
   Set the sharpness of image (Softest, Soft, Normal, Sharp, Sharpest)
4. OVER SCAN
   Adjust the displayed size. (0~8)
5. IMAGE SETTING
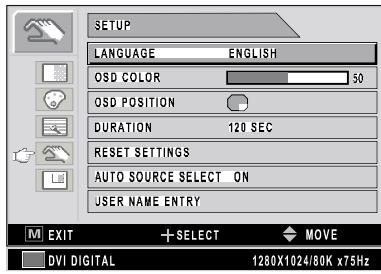   Change the image setting. (Preset 1,2 / User 1,2,3)
6. ZOOM/PAN
   Enlarge the image, move image left and right.
7. FREEZE FRAME
   Keep the image still.

SETUP

```
SETUP
LANGUAGE          ENGLISH
OSD COLOR         [========    ] 50
OSD POSITION      ◯
DURATION          120 SEC
RESET SETTINGS
AUTO SOURCE SELECT   ON
USER NAME ENTRY
M EXIT        +SELECT      ◆ MOVE
DVI DIGITAL        1280X1024/80K x75Hz
```

1. LANGUAGE
   Change the OSD language (8 language)
2. OSD COLOR
   Adjust the OSD background from white opaque to translucent.
3 .OSD POSITION
   Change the OSD position. (9 Positions)
4. DURATION
   Adjust the length of timthe OSD menu is displayed on the screen.
   (5, 10, 20, 30, 60, 90, 120, 180, 240 seconds)
5. RESET SETTING
   Change all the OSD values to factory outgoing state.
6. AUTO SOURCE SELECT
   Disable or enable auto source select.
   ON: Search through all possible input source until an active video
        source is found.
   OFF: Video input is manually selected.
7. USER NAME ENTRY
   Create or change the user name when powered on.

PIP

```
PIP
LAYOUT            SINGLE
M EXIT        +SELECT      ◆ MOVE
DSUB ANALOG        1280X1024/80K x75Hz
```

1. LAYOUT
   Change the OSD layout. (Single, PIP, PBP1, PBP2)
2. SOURCE
   Change the secondary source.
3. SIZE
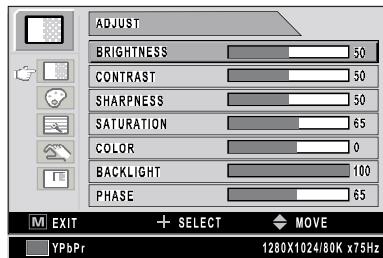   Change the PIP size (Small, Large)
4. POSITION
   Change the secondary source.
5. SWAP
   Swap the position and size of the Primary and Secondary image.

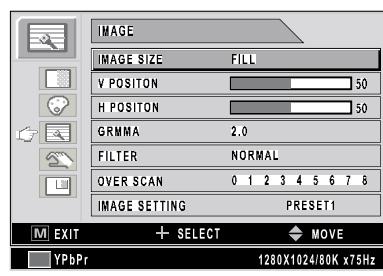## ● YPbPr input source

ADJUST

1. BRIGHTNESS
   Increase or decrease the brightness. (Range : 0~100)
2. CONTRAST
   Increase or decrease the Contrast. (Range : 0~100)
3. SHARPNESS
   Adjust the sharpness of video image. (Range : 0~100)
4. SATURATION
   Change the tone of color. (Range : 0~100)
5. COLOR
   Change the richness of color. (Range : Greenish 0~50, Redish 0~50)
6. BACKLIGHT
   Adjust backlight dimming level. (Range : 0~100)
7. CLOCK
   Increase or decrease the sampling. (Range : 0~100)
8. PHASE
   Increase or decrease the Phase level. (Range : 0~100)
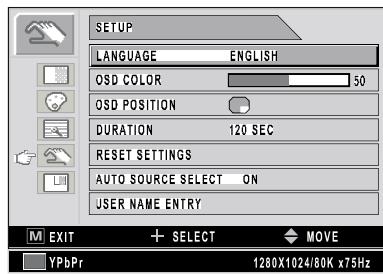
COLOR TEMP
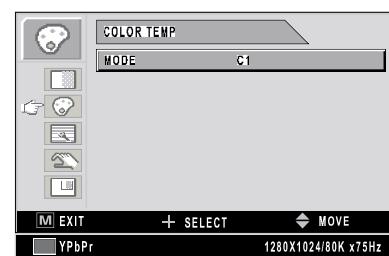
1. MODE
   Change the color temperature mode. C1(Reddish,6500K), C2(Bluish,9300K), USER (7200K)
2. RED
   Red balance. (Only works with USER Mode) (Range : 0~100)
3. GREEN
   Green balance. (Only works with USER Mode) (Range : 0~100)
4. BLUE
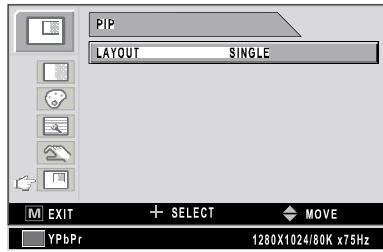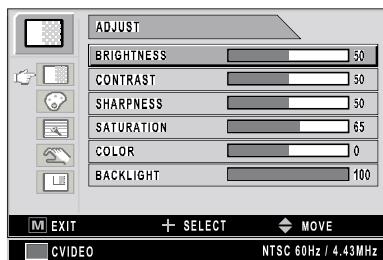   Blue balance.(Only works with USER Mode) (Range : 0~100)

IMAGE

1. IMAGE SIZE
   Change the image size. (Full, Fill aspect, 1:1, Normal, Anamorphic)
2. H POSITION
   Adjust the horizontal position of the displayed source image. (Range : 0~100)
3. V POSITION
   Adjust the vertical position of the displayed source image. (Range : 0~100)
4. GAMMA
   Adjust GAMMA value (VIDEO, BYPASS, 1.8, 2.0, 2.2, 2.4, 2.6, PACS)
5. FILTER
   Set the sharpness of image (Softest, Soft, Normal, Sharp, Sharpest)
6. OVER SCAN
   Adjust the displayed size. (0~8)
7. IMAGE SETTING
   Change the image setting. (Preset 1,2 / User 1,2,3)
8. ZOOM / PAN
   Enlarge the image, move image left and right.
9. FREEZE FRAME
   Keep the image still.

English - 37

SETUP

SETUP	
LANGUAGE	ENGLISH
OSD COLOR	50
OSD POSITION	
DURATION	120 SEC
RESET SETTINGS	
AUTO SOURCE SELECT	ON
USER NAME ENTRY	

M EXIT   + SELECT   ◆ MOVE
YPbPr   1280X1024/80K x75Hz

1. LANGUAGE
   Change the OSD language (8 language)
2. OSD COLOR
   Adjust the OSD background from white opaque to translucent.
3 .OSD POSITION
   Change the osd position. (9 Positions)
4. DURATION
   Adjust the length of time the OSD menu is displayed on the screen.
   (5, 10, 20, 30, 60, 90, 120, 180, 240 seconds)
5. RESET SETTING
   Change all the OSD values to factory outgoing state.

6. AUTO SOURCE SELECT
   Disable or enable auto source select.
   ON: Search through all possible input source until an active video
       source is found.
   OFF: Video input is manually selected.
7. USER NAME ENTRY
   Create or change the user name when powered on.

PIP

PIP	
LAYOUT	SINGLE

M EXIT   + SELECT   ◆ MOVE
YPbPr   1280X1024/80K x75Hz

1. LAYOUT
   Change the OSD layout. (Single, PIP, PBP1, PBP2)
2. SOURCE
   Change the secondary source.
3. SIZE
   Change the PIP size (Small, Large)
4. POSITION
   Change the secondary source.
5. SWAP
   Swap the position and size of the Primary and Secondary image.

SVIDEO / CVIDEO input source

ADJUST

ADJUST	
BRIGHTNESS	50
CONTRAST	50
SHARPNESS	50
SATURATION	65
COLOR	0
BACKLIGHT	100

M EXIT + SELECT ◆ MOVE
CVIDEO   NTSC 60Hz / 4.43MHz

1. BRIGHTNESS
   Increase or decrease the brightness. (Range : 0~100)
2. CONTRAST
   Increase or decrease the Contrast. (Range : 0~100)
3. SHARPNESS
   Adjust the sharpness of video image. (Range : 0~100)
4. SATURATION
   Change the tone of color. (Range : 0~100)
5. COLOR
   Change the richness of color. (Range : Greenish 0~50, Redish 0~50)
6. BACKLIGHT
   Adjust backlight dimming level. (Range : 0~100)

COLOR TEMP

COLOR TEMP	
MODE	C1

M EXIT + SELECT ◆ MOVE
CVIDEO   NTSC 60Hz / 4.43MHz

1. MODE
   Change the color temperature mode. C1(Reddish,6500K), C2(Bluish,9300K), USER(7200K)
2. RED
   Red balance. (Only works with USER Mode) (Range : 0~100)
3. GREEN
   Green balance. (Only works with USER Mode) (Range : 0~100)
4. BLUE
   Blue balance. (Only works with USER Mode) (Range : 0~100)

IMAGE

IMAGE	
IMAGE SIZE	FILL
V POSITON	50
H POSITON	50
GRMMA	2.0
FILTER	NORMAL
OVER SCAN	0 1 2 3 4 5 6 7 8
IMAGE SETTING	PRESET1

M EXIT + SELECT ◆ MOVE
CVIDEO   NTSC 60Hz / 4.43MHz

1. IMAGE SIZE
   Change the image size. (Full, Fill aspect, 1:1, Normal, Anamorphic)
2. H POSITION
   Adjust the horizontal position of the displayed source image. (Range : 0~100)
3. V POSITION
   Adjust the vertical position of the displayed source image. (Range : 0~100)
4. GAMMA
   Adjust GAMMA value (VIDEO, BYPASS,1.8, 2.0, 2.2, 2.4, 2.6, PACS)
5. FILTER
   Set the sharpness of image (Softest, Soft, Normal, Sharp, Sharpest)
6. OVER SCAN
   Adjust the displayed size. (0~8)
7. IMAGE SETTING
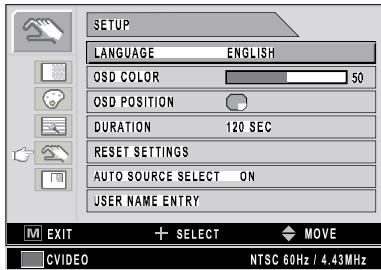   Change the image setting.(Preset 1,2 / User 1,2,3)
8. ZOOM / PAN
   Enlarge the image, move image left and right.
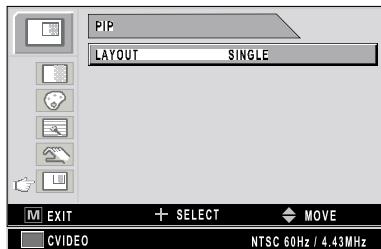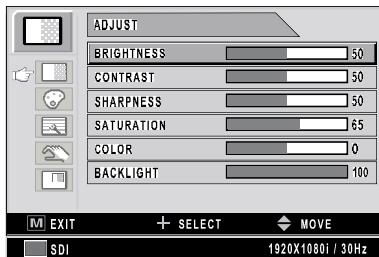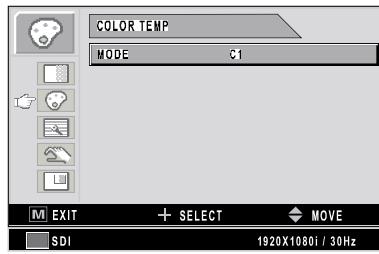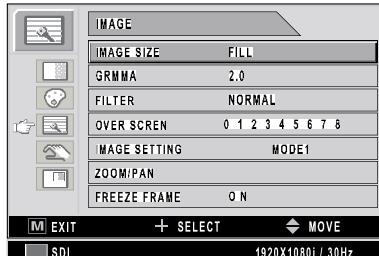9. FREEZE FRAME
   Keep the image still.

SETUP

1. LANGUAGE
   Change the OSD language (8 language)
2. OSD COLOR
   Adjust the OSD background from white opaque to translucent.
3. OSD POSITION
   Change the osd position. (9 Positions)
4. DURATION
   Adjust the length of time the OSD menu is displayed on the screen.
   (5, 10, 20, 30, 60, 90, 120, 180, 240 seconds)
5. RESET SETTING
   Change all the OSD values to factory outgoing state.

6. AUTO SOURCE SELECT
   Disable or enable auto source select.
   ON: Search through all possible input source until an active video
       source is found.
   OFF: Video input is manually selected.
7. USER NAME ENTRY
   Create or change the user name when powered on.

PIP

1. LAYOUT
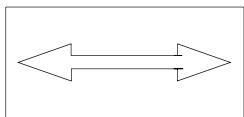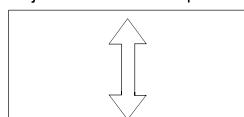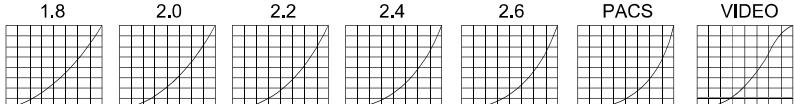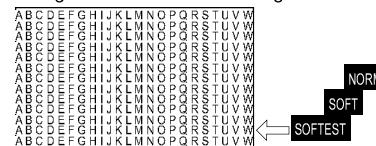   Change the OSD layout. (Single, PIP, PBP1, PBP2)
2. SOURCE
   Change the secondary source.
3. SIZE
   Change the PIP size (Small, Large)
4. POSITION
   Change the secondary source.
5. SWAP
   Swap the position and size of the Primary and Secondary image.

SDI input source

ADJUST

ADJUST	
BRIGHTNESS	50
CONTRAST	50
SHARPNESS	50
SATURATION	65
COLOR	0
BACKLIGHT	100

M EXIT + SELECT ⬍ MOVE
SDI 1920X1080i / 30Hz

1. BRIGHTNESS
    Increase or decrease the brightness. (Range : 0~100)
2. CONTRAST
    Increase or decrease the Contrast. (Range : 0~100)
3. SHARPNESS
    Adjust the sharpness of video image. (Range : 0~100)
4. SATURATION
    Change the tone of color. (Range : 0~100)
5. COLOR
    Change the richness of color. (Range : Greenish 0~50,Redish 0~50)
6. BACKLIGHT
    Adjust backlight dimming level. (Range : 0~100)

COLOR TEMP

COLOR TEMP	
MODE	C1

M EXIT + SELECT ⬍ MOVE
SDI 1920X1080i / 30Hz

1. MODE
    Change the color temperature mode. C1(Reddish,6500K), C2(Bluish,9300K),
    USER(7200K)
2. RED
    Red balance. (Only works with USER Mode) (Range : 0~100)
3. GREEN
    Green balance. (Only works with USER Mode) (Range : 0~100)
4. BLUE
    Blue balance. (Only works with USER Mode) (Range : 0~100)

IMAGE

IMAGE	
IMAGE SIZE	FILL
GRMMA	2.0
FILTER	NORMAL
OVER SCREN	0 1 2 3 4 5 6 7 8
IMAGE SETTING	MODE1
ZOOM/PAN	
FREEZE FRAME	O N

M EXIT + SELECT ⬍ MOVE
SDI 1920X1080i / 30Hz

1. IMAGE SIZE
    Change the image size.(Full, Fill aspect, 1:1, Normal, Anamorphic)
2. GAMMA
    Adjust GAMMA value (VIDEO, BYPASS, 1.8, 2.0, 2.2, 2.4, 2.6, PACS)
3. FILTER
    Set the sharpness of image (Softest, Soft, Normal, Sharp, Sharpest)
4. OVER SCAN
    Adjust the displayed size. (0~8)
5. IMAGE SETTING
    Change the image setting. (Preset 1,2 / User 1,2,3)
6. ZOOM / PAN
    Enlarge the image, move image left and right.
7. FREEZE FRAME
    Keep the image still.

SETUP

1. LANGUAGE
   Change the OSD language (8 language)
2. OSD COLOR
   Adjust the OSD background from white opaque to translucent.
3. OSD POSITION
   Change the OSD position. (9 Positions)
4. DURATION
   Adjust the length of time the OSD menu is displayed on the screen.

   (5, 10, 20, 30, 60, 90, 120, 180, 240 seconds)
5. RESET SETTING
   Change all the OSD values to factory outgoing state.
6. AUTO SOURCE SELECT
   Disable or enable auto source select.
   ON: Search through all possible input source until an active video
       source is found.
   OFF: Video input is manually selected.
7. USER NAME ENTRY
   Create or change the user name when powered on.

PIP

1. LAYOUT
   Change the OSD layout. (Single, PIP, PBP1, PBP2)
2. SOURCE
   Change the secondary source.
3. SIZE
   Change the PIP size (Small, Large)
4. POSITION
   Change the secondary source.
5. SWAP
   Swap the position and size of the Primary and Secondary image.
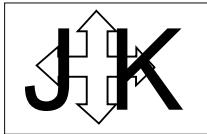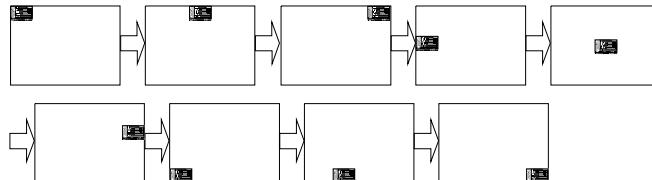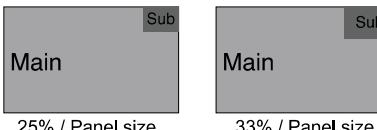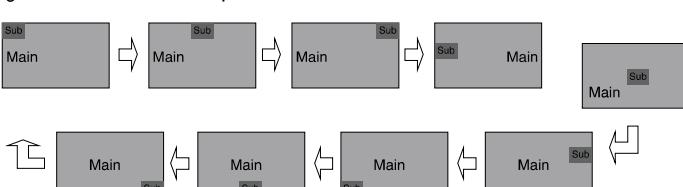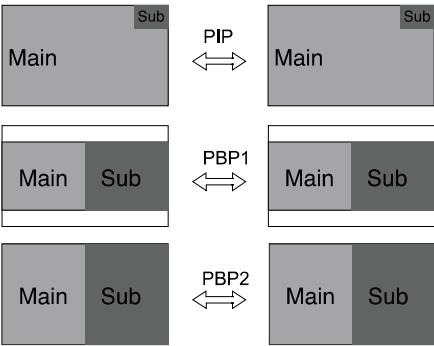
OSD System overview

Menus	Function Descriptions
BRIGHTNESS	Press the BRIGHTNESS button to display the ADJUST menu or UP, DOWN hot key. Setting the brightness too high or too low will decrease the amount of visible grayscales.
CONTRAST	Press the CONTRAST button to display the ADJUST menu or +, - hot key. Setting the Contrast too high or too low will cause loss of some grascales.
CLOCK	Do not adjust. It will adjust automatically after auto adjustment. When frequency value is wrong, the horizontal image will have a wrong size or noise.
PHASE	Do not adjust. It will adjust automatically after auto adjustment. When frequency value is wrong, the image will have a noise.
BACKLIGHT	Adjust backlight dimming level. Setting the backlight too low will cause dark image and too high will decrease the backlight life time.
AUTO ADJUST	Fit to the most appropriate screen on the D-SUB Analog signal
SHARPNESS	Adjust the sharpness of video image
SATURATION	Change the tone of color
COLOR	Change the richness of color(Range Greenish 0~50,Redish 0~50)
COLOR TEMP C1	Default 6500K color setting
COLOR TEMP C2	Default 9300K color setting
COLOR TEMP USER	Default 7200K color setting,but can be adjusted by the user
IMAGE SIZE	**DSUB/ DVI OPTICAL / DVI DIGITAL input source** FULL FILL ASPECT 1:1 NORMAL CAUTION : FILL ASPECT,NORMAL Size depends on input size ratio **YPbPr / RGBS / SDI / CVIDEO / SVIDEO input source** FULL FILL ASPECT 1:1 NORMAL ANAMORPHIC CAUTION : FILL ASPECT,NORMAL Size depends on input size ratio

Menus	Function Descriptions
H POSITION	Adjust the Horizontal position of the image. It will return to the default state when executing AUTO ADJUST OR RESET SETTINGS.
V POSITION	Adjust the Horizontal position of the image. It will return to the default state when executing AUTO ADJUST OR RESET SETTINGS.
GAMMA	Adjust the gamma curve of video image. 1.8　　2.0　　2.2　　2.4　　2.6　　PACS　　VIDEO (NOTICE) BYPASS is depends on panel gamma value, please refer to the panel specification.
FILTER	Adjust the gamma curve of video image. SHARPEST SHARP NORMAL SOFT SOFTEST
OVER SCAN	Enable 10% over scan of orignal input image. 0:　　　1:　　　2: 3:　　　4:　　　5: 6:　　　7:　　　8:
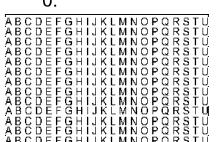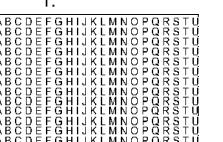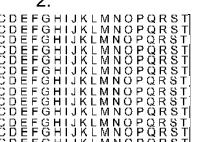
Menus	Function Descriptions
IMAGE SETTING	Save 5 user setting values for BRIGHTNESS,CONTRAST,COLOR,TEMP,FILTER separately.(PRESET1,2,3 / USER 1,2)
ZOOM / PAN	Controls the zoom in/out of the image. 0 Step : 4 Step : 9 Step : 13 Step : 18 Step : 22 Step : 26 Step : 30 Step : Controls the PAN in/out of the image.
FREEZE FRAME	Freeze the main image. Does not support secondary image at PIP mode.
LANGUAGE	Change the OSD language (8 languages) ENGLISH / GERMAN / FRENCH / SPANISH / ITALIAN / JAPANESE / CHINESE / KOREAN
OSD COLOR	Adjust the color of the OSD. TRANSFARENT
OSD POSITION	Adjust the position of the OSD.
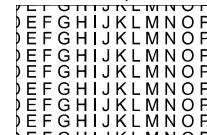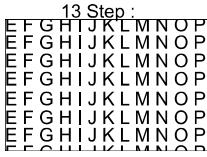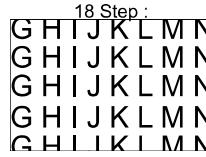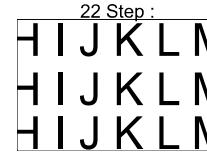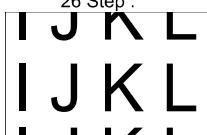
Menus	Function Descriptions
OSD DURATION	Adjust the length of time the OSD menu is displayed on the screen.
RESET SETTING	Reset the unit to factoy outgoing status.
AUTO SOURCE SELECT	When AUTO SOURCE SELECT is on, the monitor will automatically search input source except PIP sub Source.
USER NAME ENTRY	Enter user name or other information.
PIP LAY OUT	Change sub window layout (SINGLE, PIP, PBP1, PBP2) PIP : Main/Sub window doesn't change aspect ratio PBP1 : Main/Sub window doesn't change aspect ratio PBP2 : Main/Sub window H/V display 1:1 size

PIP SOURCE — Select PIP source input. You can change other sub windows through the OSD PIP menu. Below chart is PIP

Input Source	Sub window							
	DVI OPTICAL	DVI DIGITAL	DSUB ANALOG	SDI	YPbPr	RGBS	CVIDEO	SVIDEO
DVI OPTICAL	X	O	O	O	O	O	O	O
DVI DIGITAL	O	X	X	O	X	X	O	O
DSUB ANALOG	O	X	X	O^1	X	X	O	O
SDI	O	O	O^1	X	O^1	O^1	X	X
YPbPr	O	X	X	O^1	X	X	O	O
RGBS	O	X	X	O^1	X	X	O	O
CVIDEO	O	O	O	X	O	O	X	X
SVIDEO	O	O	O	X	O	O	X	X

O^1 : Support up to UXGA,60Hz (162MHz)

PIP SIZE — Change PIP mode sub window size

SMALL   LARGE

25% / Panel size   33% / Panel size

PIP POSITION — Change PIP mode sub window position

Menus	Function Descriptions
SWAP	Change main window and sub window position on PIP,PBP1,PBP2. Main / Sub — PIP ⟺ Main / Sub Main / Sub — PBP1 ⟺ Main / Sub Main / Sub — PBP2 ⟺ Main / Sub

PC Supported Mode

Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	FS-L190*D(T)	FS-L320*D / FS-L420*D	FS-L240*D(T) / FS-L260*D
640 X 350 @70Hz	31.50	70.00	25.17			
720 X 400 @70Hz	31.50	70.00	28.32			
640 X 480 @60Hz	31.50	60.00	25.18			
640 X 480 @75Hz	37.50	75.00	31.50			
800 X 600 @60Hz	37.90	60.00	40.00			
800 X 600 @75Hz	46.90	75.00	49.50			
1024 X 768 @60Hz	48.40	60.00	65.00			
1024 X 768 @75Hz	60.00	75.00	78.75			
1152 X 864 @60Hz	54.35	60.00	80.000			
1152 X 864 @75Hz	67.50	75.00	108.00			
1280 X 720 @60Hz	44.70	60.00	74.40			
1280 X 1024@60Hz	64.00	60.00	108.00			
1280 X 1024@75Hz	80.00	75.00	135.00			
1360 X 768@75Hz	47.70	60.00	108.75			
1600 X 1200@60Hz	75.00	60.00	162.00			
1920 X 1080@60Hz	67.50	60.00	148.50			
1920 X 1200@60Hz	74.00	60.00	154.12			

SDI Video format

Output Signal	Description
SMPTE-274M	1080i (60 / 59.94 / 50) 1080p (30 /29.97 / 25 / 24 / 24sF / 23.98 / 23.98sF)
SMPTE-296M	720p (60 / 59.94 / 50)
SMPTE-260M	1035i (60 / 59.94)
SMPTE-125M	480i (59.94)
ITU-R BT.656	576i (50)

Signal connector Pin Assignments

● VGA (15Pin D-SUB)

Pin No.	Assignment	Pin No.	Assignment
1	Red	9	No Connection
2	Green	10	Ground-Sync
3	Blue	11	Ground
4	Ground	12	DDC Data
5	DDC 5V Standby	13	H.Sync
5	Cable Connection check	14	V.Sync
6	Ground-Red	15	DDC Clock
7	Ground-Green		
8	Ground-Blue		
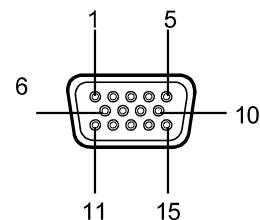
● DVI In,Out (24Pin DVI-D)

Pin No.	Assignment	Pin No.	Assignment
1	T.M.D.S. Data2-	13	No Connection
2	T.M.D.S. Data2+	14	+5V Power
3	T.M.D.S. Data2 Shield	15	Ground
4	No Connection	16	Hot Plug Detect
5	No Connection	17	T.M.D.S. Data0-
6	DDC Clock	18	T.M.D.S. Data0+
7	DDC Data	19	T.M.D.S. Data0 Shield
8	No Connection	20	No Connection
9	T.M.D.S. Data1-	21	No Connection
10	T.M.D.S. Data1+	22	T.M.D.S. Clock Shield
11	T.M.D.S. Data1 Shield	23	T.M.D.S. Clock+
12	No Connection	24	T.M.D.S. Clock-
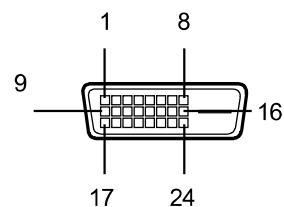
● C-Video (BNC)

Pin No.	Assignment
1	Composite
2	Ground
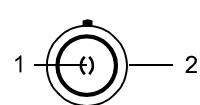
S-Video (BNC)

Pin No.	Assignment
1	S-VIDEO/Y (Luma)
2	S-VIDEO/C (Chroma)
3	Ground
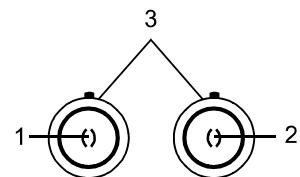
RS232C (D-SUB 9Pin)

Pin No.	Assignment
1	No Connection
2	TXD
3	RXD
4	No Connection
5	Ground
6	No Connection
7	No Connection
8	No Connection
9	No Connection
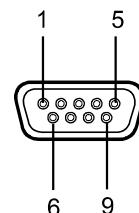
SDI (BNC)

Pin No.	Assignment
1	SDI IN
2	SDI OUT
3	Ground
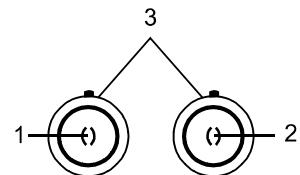
⊙ RGBHV/RGBS/YPbPr (BNC)

Pin No.	Assignment	
	RGBS	Y Pb Pr
1	Red	Pr
2	Green	Y
3	Blue	Pb
4	H-Sync / C-Sync	No Connection
5	V-Sync	No Connection
6	Ground	

| R/Pr | G/Y | B/Pb | CS/HS | VS |
| 1 | 2 | 3 | 4 | 5 |
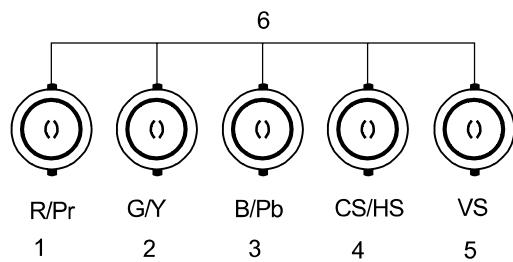
⊙ OPTICAL

Pin No.	Assignment
1	OPICAL Clock
2	OPICAL Blue
3	OPICAL Green
4	OPICAL Red
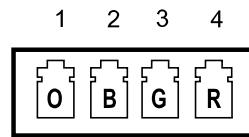
⊙ GPIO

Pin No.	Assignment
1	P,S Swap
2	PIP,PBP1,PBP2 Select
3	Record Indicator
4	Ground

English - 51
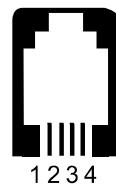
Specification

● FS-L190*D / FS-L190*DT

Model		FS-L190*D / FS-L190*DT
Optical Characteristics	Type	19" TFT-LCD
	Screen Size	19 inch
	Maximum Resolution	1280 X 1024 @ 60Hz
	Pixel Pitch	0.294(H) mm X 0.294(V) mm
	Display Colors	16.7M
	Contrast Ratio(Typical)	500:1
	Viewing Angle	85° / 85° / 85° / 85°
	Response Time	14 msec(Gray to Gray)
	Luminance(Typical)	210cd/㎡
Touch Specification (F-L190*DT only)	Touch panel	ELO 5wire resistive touch screen
	Interface	USB & SERIAL
Front Filter (FS-L190*D only)	Acrylic	Double side Anti-Reflection coating
Synchronization	Horizontal Frequency	30KHz~75KHz
	Vertical Frequency	50Hz~75Hz
Power Consumption	Maximum	Max 60W
	Standby node	Max 20W
Control Key	Front side	INPUT, -, +, ▼, ▲, PIP, MENU, POWER
Input Signal	Video	1찔DVI, 1찔 Optical DVI 1(DVI 2 option), 1찔 D-SUB, 1찔BNC (CVBS)Video, 2 찔 BNC (SVHS Y/C), 1 찔 BNC(SDI), 5 찔 BNC (Component Y/G, Pb/B, Pr/R, H/CS, VS)
Output Signal	Video	1찔DVI, 1찔BNC (SDI)
Input Power	DC 12V, 7A Max	
Dimension	Size and Weight	423(W)X351.5(H)X76.5(D) (mm) 7.3Kg -Without stand 16.653(W)X13.838(H)X3.011(D) (inch) 16.09 lbs-Without stand

● FS-L240*D / FS-L240*DT

Model		FS-L240*D / FS-L240*DT
Optical Characteristics	Type	24" TFT-LCD
	Screen Size	24 inch
	Maximum Resolution	1920 X 1200 @ 60Hz
	Pixel Pitch	0.270(H) mm X 0.270(V) mm
	Display Colors	16.7M
	Contrast Ratio(Typical)	700:1
	Viewing Angle	89° / 89° / 89° / 89°
	Response Time	5 msec(Gray to Gray)
	Luminance(Typical)	320cd/㎡
Touch Specification (F-L240*DT only)	Touch Panel	ELO 5wire resistive touch screen
	Interface	USB & SERIAL
Front Filter (FS-L240*D only)	Acrylic	Double side Anti-Reflection coating
Synchronization	Horizontal Frequency	30KHz~75KHz
	Vertical Frequency	50Hz~75Hz
Power Consumption	Maximum	Max 100W
	Standby Mode	Max 20W
Control Key	Front side	INPUT, -, +, ▼, ▲, PIP, MENU, POWER
Input Signal	Video	1쩰DVI, 1쩰 Optical DVI 1(DVI 2 option), 1쩰 D-SUB, 1쩰BNC (CVBS)Video, 2 쩰 BNC (SVHS Y/C), 1 쩰 BNC(SDI), 5 쩰 BNC (Component Y/G, Pb/B, Pr/R, H/CS, VS)
Output Signal	Video	1쩰DVI, 1쩰BNC (SDI)
Input Power	DC 24V, 6.25A Max	
Dimension	Size and Weight	580(W)X386(H)X95(D) (mm) 7.5Kg -Without stand 22.834(W)X15.196(H)X3.740(D) (inch) 16.53 lbs-Without stand

Model		FS-L260*D
Optical Characteristics	Type	26" TFT-LCD
	Screen Size	26 inch
	Maximum Resolution	1920X 1200 @ 60Hz
	Pixel Pitch	0.2685(H) mm X 0.2685(V) mm
	Display Colors	16.7M
	Contrast Ratio(Typical)	700:1
	Viewing Angle	89° / 89° / 89° / 89°
	Response Time	5 msec(Gray to Gray)
	Luminance(Typical)	320cd/㎡
Synchronization	Horizontal Frequency	30KHz~75KHz
	Vertical Frequency	50Hz~75Hz
Front Filter	Acrylic	Double side Anti-Reflection coating
Powr Consumption	Maximum	Max 130W
	Standby Mode	Max 20W
Control Key	Front side	INPUT, -, +, ▼, ▲, PIP, MENU, POWER
Input Signal	Video	1쩰DVI, 1쩰 Optical DVI 1(DVI 2 option), 1쩰 D-SUB, 1쩰BNC (CVBS)Video, 2 쩰 BNC (SVHS Y/C), 1 쩰 BNC(SDI), 5 쩰 BNC (Component Y/G, Pb/B, Pr/R, H/CS, VS)
Output Signal	Video	1쩰DVI, 1쩰BNC (SDI)
Input Power	DC 24V, 6.25A Max	
Dimension	Size and Weight	618(W)X412(H)X99.5(D) (mm) 8.8Kg -Without stand 24.330(W)X16.220(H)X3.917(D) (inch) 19.4 lbs-Without stand

● FS-L320*D

Model		FS-L320*D
Optical Characteristics	Type	32" TFT-LCD
	Screen Size	32 inch
	Maximum Resolution	1920X1080 @ 60Hz
	Pixel Pitch	0.363(H) mm X 0.363(V) mm
	Display Colors	1.06 billion
	Contrast Ratio(Typical)	850:1
	Viewing Angle	89° / 89° / 89° / 89°
	Response Time	6msec(Gray to Gray)
	Luminance(Typical)	380cd/㎡
Synchronization	Horizontal Frequency	30KHz~75KHz
	Vertical Frequency	50Hz~75Hz
Front Filter	Glass	Double side Anti-Reflection coating
Powr Consumption	Maximum	Max 150W
	Standby Mode	Max 20W
Control Key	Front Side	INPUT, -, +,▼, ▲, PIP, MENU, POWER
Input Signal	Video	1쩰DVI, 1쩰 Optical DVI 1(DVI 2 option), 1쩰 D-SUB, 1쩰BNC (CVBS)Video, 2 쩰 BNC (SVHS Y/C), 1 쩰 BNC(SDI), 5 쩰 BNC (Component Y/G, Pb/B, Pr/R, H/CS, VS)
Output Signal	Video	1쩰DVI, 1쩰BNC (SDI)
Input Power	DC 24V, 7.5A Max	
Dimension	Size and Weight	795(W)X485(H)X100(D) (mm) 15.8Kg -Without stand 31.299(W)X19.094(H)X3.937(D) (inch) 34.8 lbs-Without stand

● FS-L420*D

Model		FS-L420*D
Optical Characteristics	Type	42" TFT-LCD
	Screen Size	42 inch
	Maximum Resolution	1920X1080 @ 60Hz
	Pixel Pitch	0.4845(H) mm X 0.4845(V) mm
	Display Colors	1.06 billion
	Contrast Ratio(Typical)	650:1
	Viewing Angle	89° / 89° / 89° / 89°
	Response Time	5 msec(Gray to Gray)
	Luminance(Typical)	400cd/$㎡$
Synchronization	Horizontal Frequency	30KHz~75KHz
	Vertical Frequency	50Hz~75Hz
Front Filter	Glass	Double side Anti-Reflection coating
Powr Consumption	Maximum	Max 260W
	Standby Mode	Max 20W
Control Key	Front Side	INPUT, -, +,▼, ▲, PIP, MENU, POWER
Input Signal	Video	1쩰DVI, 1쩰Optical DVI 1(DVI 2 option), 1쩰D-SUB, 1쩰BNC (CVBS)Video, 2쩰 BNC (SVHS Y/C), 1 쩰 BNC(SDI), 5 쩰 BNC (Component Y/G, Pb/B, Pr/R, H/CS, VS)
Output Signal	Video	1쩰DVI, 1쩰BNC (SDI)
Input Power	AC 100~230V, 50~60Hz,3A Max	
Dimension	Size and Weight	1024.6(W)X617.4(H)X111.1(D) (mm) 28Kg -Without stand 40.338(W)X24.307(H)X4.374(D) (inch) 61.7lbs-Without stand